MEMORANDUM

TO: File, Missouri Electric Works

THROUGH: Bill Pedicino, ENSV

DeAndre Singletary, SUPR/MOKS

FROM: Dan Gravatt, SUPR/MOKS

DATE: June 12, 2013

SUBJECT: Missouri Electric Works, Data Validation Memorandum for Quarterly Monitored Natural Attenuation (MNA) Sampling

EPA awarded a task order (EP-S7-09-01, Task Order 0036) in May 2012 to Seagull Environmental for one MNA sampling event, and followed up with a second task order (EP-S7-12-04, Task Order 0002) in August 2012 to Seagull for three more quarterly MNA sampling events. This work was conducted under a Quality Assurance Project Plan dated March 2011 and approved by Diane Harris of EPA's ENSV Division on April 4, 2011 (R7QAO Document No. 2011150). The purpose of this MNA sampling was to collect four quarters of current data for the majority of analytical parameters required by EPA's MNA guidance document (EPA/600/R-98/128, September 1998) to document that MNA is occurring at a site and support an Explanation of Significant Differences to select the contingent MNA remedy specified in the 2005 Operable Unit 2 ROD. A summary of the quarterly data is attached.

The EPA RPM visited the site to observe the first MNA sampling event in June, 2012 to ensure that Seagull personnel were following the QAPP. No deficiencies were noted. Subsequent sampling events in October 2012, January 2013 and April 2013 were conducted by Seagull without EPA field oversight.

The EPA Region 7 Regional Laboratory provided all analytical services for this QAPP, either directly or through contractual arrangements with third-party laboratories for analytical methods that were not available in-house. The Analytical Services Requests associated with this QAPP included 5316 (June), 5900 (October), 5978 (January) and 6068 (April). Analyses were performed for VOCs, alkalinity, anions, sulfide, total organic carbon, and methane/ethane/ethene. The laboratory methods used for these analyses were as specified in the QAPP. In addition, Seagull personnel performed colorimetric field tests for ferrous iron and used a flow-through multi-parameter probe to measure temperature, pH, dissolved oxygen and oxidation-reduction potential during purging.

The sample container for total organic carbon for well MW-15A in the April sampling event was broken during shipping, so no TOC analysis was performed for that well. RLAB received all other samples for each ASR in good order and within holding times. Analyses were performed within holding times with the exception of one analysis for nitrite in the April sampling event.

RLAB provided analytical reports for each ASR that summarized and explained all qualifiers the laboratory applied to the data. No recurring or pervasive problems were identified with the laboratory

procedures, and the data were qualified appropriately as U (non-detect at reporting limit), UJ (non-detect at estimated reporting limit), or J (estimated) based on internal laboratory QA checks.

Quality control samples were collected as specified in the QAPP, and consisted of two duplicate samples, a matrix spike/matrix spike duplicate for VOCs, a trip blank for VOCs, and an equipment rinsate sample for VOCs. Duplicate samples were deliberately collected at monitoring wells MW-16B and MW-16C due to the known presence of VOCs in these wells; however, in the January sampling event, a field duplicate was erroneously collected from well MW-21A instead of MW-16B. The impact of this substitution is minimal. Agreement of duplicate results was good with most RPDs below 20%.

Minor detections of acetone and chloroform were found in the rinsate sample from the October sampling event. The impact of these detections is minimal as these analytes were not detected in the associated groundwater samples.

In summary, this sampling effort was performed in accordance with the approved QAPP, and the data collected is of known and acceptable quality for decision-making purposes.